

SEQUENCE LISTING

(1) GENERAL INFORMATION:

(i) APPLICANT: Glazer, Peter M.
Havre, Pamela A.

(ii) TITLE OF INVENTION: Chemically Modified Oligonucleotide for
Site-Directed Mutagenesis

(iii) NUMBER OF SEQUENCES: 13

(iv) CORRESPONDENCE ADDRESS:

(A) ADDRESSEE: Patrea L. Pabst
(B) STREET: 1100 Peachtree Street, Suite 2800
(C) CITY: Atlanta
(D) STATE: Georgia
(E) COUNTRY: USA
(F) ZIP: 30309-4530

(v) COMPUTER READABLE FORM:

(A) MEDIUM TYPE: Floppy disk
(B) COMPUTER: IBM PC compatible
(C) OPERATING SYSTEM: PC-DOS/MS-DOS
(D) SOFTWARE: PatentIn Release #1.0, Version #1.25

(vi) CURRENT APPLICATION DATA:

(A) APPLICATION NUMBER: US 08/083,088
(B) FILING DATE: 25-JUN-1993
(C) CLASSIFICATION:

(vii) ATTORNEY/AGENT INFORMATION:

(A) NAME: Patrea L.
(B) REGISTRATION NUMBER: 31,284
(C) REFERENCE/DOCKET NUMBER: YU109

(viii) TELECOMMUNICATION INFORMATION:

(A) TELEPHONE: (404)-815-6508
(B) TELEFAX: (404)-815-6555

(2) INFORMATION FOR SEQ ID NO:1:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 11 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION: 1..11
- (D) OTHER INFORMATION: /function= "N is 4'-hydroxymethyl-4',5',8-trimethylpsoralen"

(x) PUBLICATION INFORMATION:

(A) AUTHORS: Glazer, Peter M.

Havre, Pamela A.

(K) RELEVANT RESIDUES IN SEQ ID NO:1: FROM 1 TO 11

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

NAGGAAGGGG G

(2) INFORMATION FOR SEQ ID NO:2:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

39

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

AGGAAGGGG

(2) INFORMATION FOR SEQ ID NO:3:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

GGGGAAGGA

(2) INFORMATION FOR SEQ ID NO:4:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 8 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

10

10

1920-21 1921-22 1922-23 1923-24 1924-25 1925-26 1926-27 1927-28 1928-29 1929-30

40

(iii) MOLECULE TYPE: DNA (genomic)

iii) HYPOTHETICAL: NO

(iv) ANTI-SENSES: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4:

CCCTTC

(2) INFORMATION FOR SEO ID NO: 5:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 11 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(iii) MOLECULE TYPE: DNA (genomic)

iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(ix) FEATURE:

(B) LOCATION: 1..11
(D) OTHER INFORMATION: /function= "N is
4'-hydroxymethyl-4,5',8-trimethylpsoralen"

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

NGGGGAAGG A

1

8

(2) INFORMATION FOR SEQ ID NO:6:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 18 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

GGTTCGAAC CTTCCCCC

(2) INFORMATION FOR SEQ ID NO:7:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 18 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

GGTTCCAAAC CTTCCCCC

(2) INFORMATION FOR SEQ ID NO:8:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 35 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

TGGTGGTGGG GGAAGGATTG GAACCTTCGA AGTCG

(2) INFORMATION FOR SEQ ID NO:9:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 35 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

CGACTTCGAA GGTTCGAAC TTTCCCCCAC CACCA

(2) INFORMATION FOR SEQ ID NO:10:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 121 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(ix) FEATURE:

- (A) NAME/KEY: misc feature
- (B) LOCATION: 1..60
- (D) OTHER INFORMATION: /function= "At positions 16 and 57, N is G or T."

(ix) FEATURE:

- (A) NAME/KEY: misc feature
- (B) LOCATION: 1..121
- (D) OTHER INFORMATION: /function= "At position 17, N is A, G or T."

(ix) FEATURE:

- (A) NAME/KEY: misc feature
- (B) LOCATION: 1..121
- (D) OTHER INFORMATION: /function= "At position 18, N is A, C or T."

(ix) FEATURE:

- (A) NAME/KEY: misc feature
- (B) LOCATION: 1..121
- (D) OTHER INFORMATION: /function= "At position 20, N is G or A."

- (ix) FEATURE:
 (A) NAME/KEY: misc feature
 (B) LOCATION: 1..121
 (D) OTHER INFORMATION: /function= "At position 24, N is C
 or T."

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

TGGTGGGG GGAAGNNTN GAANCTTCGA AGTCGATGAC GGCAGATTAA GAGTCTNCTC
 CCTTTGGCCG CTGGGAACC CCACCAACGG TAATGCTTTT ACGGGGCCA TCATATCAA
 60
 120
 121

T

(2) INFORMATION FOR SEQ ID NO:11:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 121 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

- (iii) HYPOTHETICAL: NO
 (iv) ANTI-SENSE: NO

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:

ATTTGATATG ATGGGCCCG TAAAGGATT ACCTGTGGTG GGTTCCCGA GCGGCCAAG
 GGAGCAGACT CTAATCTGC CGTCATCGAC TTGAAAGGTT CGAATCCTTC CCCAACCC
 60
 120
 121

A

(2) INFORMATION FOR SEQ ID NO:12:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 121 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA (genomic)

(iii) HYPOTHETICAL: NO

(iv) ANTI-SENSE: NO

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION: 1..121
- (C) OTHER INFORMATION: /function= "At position 7, N is G or T."
- (D) OTHER INFORMATION: /function= "At positions 12, 20 and 117, N is C or G."

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION: 1..121
- (C) OTHER INFORMATION: /function= "At positions 15, 16, 21, 29, 78, 83 and 108, N is A or G."
- (D) OTHER INFORMATION: /function= "At positions 15, 16, 21, 29, 78, 83 and 108, N is C or G."

(ix) FEATURE:

- (A) NAME/KEY: misc_feature
- (B) LOCATION: 1..121
- (C) OTHER INFORMATION: /function= "At positions 18, 49, 68, 69, and 107, N is C or T."
- (D) OTHER INFORMATION: /function= "At positions 18, 49, 68, 69, and 107, N is C or T."

- (ix) FEATURE:
- (A) NAME/KEY: misc feature
 - (B) LOCATION: 1..121
 - (D) OTHER INFORMATION: /function= "At position 114, N is C, T or A."
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:
- ```

TGGTGGNGG GNAANNANT NAACCTTCNA AGTCGATGAC GGCAGATTNN GAGTCTNCTC
CCTTTGGNNG CTCGGGANCC CCNCCACAGG TAATGCTTTT ACGGGGNNCA TCANNTNAAA

```
- T
- (2) INFORMATION FOR SEQ ID NO:13:
- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 121 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: DNA (genomic)
- (iii) HYPOTHETICAL: NO
- (iv) ANTI-SENSE: NO
- (ix) FEATURE:
- (A) NAME/KEY: misc feature
  - (B) LOCATION: 1..121
  - (D) OTHER INFORMATION: /function= "At position 16, N is G or A."
- (ix) FEATURE:
- (A) NAME/KEY: misc feature
  - (B) LOCATION: 1..121
  - (D) OTHER INFORMATION: /function= "At position 17, N is A or T."

- (ix) FEATURE:  
(A) NAME/KEY: misc feature  
(B) LOCATION: 1..121  
(D) OTHER INFORMATION: /function= "At position 19, N is T  
or C."

- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:

TGGTGGGG GGAAGNNTNC AACCTTCGA AGTCGATGAC GGCAGATTAA GAGTCTNCTC  
120  
CCTTTGGCCG CTCGGAACCC ACCACAGG TATGCTTTT ACGGGGGCA TCATATCAA  
121